Dynamics, Vibrations, Mechatronics, Microelectrical Mechanical Systems

Topics covered in mechanical design include kinematics, mechanisms, on which to build a successful mechanical engineering career. Courses The program has been developed to provide students with a broad base provides the graduate with many possibilities for a satisfying career.

Typically mechanical engineers are employed in a wide range of industries, such as manufacturing, power, aerospace, automotive, and maintenance, and safety engineering.

Manufacturing engineering is involved with planning and selecting manufacturing methods, with designing and developing manufacturing equipment, and with increasing the efficiency and productivity of current manufacturing technologies as well as creating new ones. Manufacturing engineers use materials science, metal cutting and forming theories, stochastic-dynamic models, principles of numerical and adaptive control, engineering statistics, and other physical sciences to solve manufacturing problems. A new area in manufacturing is virtual manufacturing, which combines virtual reality techniques, factory design, equipment design, training, and contamination control in industrial applications.

Production engineering deals with the analysis, design, installation, and maintenance of operational and management systems involved in the production and distribution of goods and services. Such topics as quality control, production scheduling, production planning, inventory control, and maintenance policy are included in this area.

Systems engineering involves the theory and practice of modeling a general system design. The systems engineer develops mathematical, statistical, and computer models of complex systems to predict how a design or policy change will affect the real world. Human factors, maintenance, and safety engineering deal with the problems caused by the interaction of complex man-machine systems. The engineers in this area apply knowledge about sensory, perceptual, and mental characteristics in the engineering design of equipment and facilities to ensure worker comfort and safety.

Because the training of industrial engineers is so broad, they are in demand not only in all types of industry but also in service organizations, such as hospitals, banks, insurance companies, and research laboratories.

The program also emphasizes computer applications, professional ethics, communication skills, ability to work in a multidisciplinary team and awareness of broad education, lifelong learning, and contemporary issues.
The objectives of the Bachelor of Science in Industrial Engineering can be found online.

**BS in Engineering Management**

The College of Engineering and the College of Business Administration offer a joint program in engineering management that allows students latitude to study in both the business administration and engineering disciplines. This program prepares students to begin careers that may lead to administrative, staff, or management positions in small technological engineering or manufacturing operations or positions as production supervisors, administration staff, or managers of departments in large technological organizations. The program also prepares students for careers in large nontechnological organizations such as banks, which may require a combination of engineering and management experiences.

The Bachelor of Science in Engineering Management is awarded by the College of Engineering. Entrance requirements are the same as for the College of Engineering.

To complete the required 128 semester hours of university credit, students take required courses in engineering as well as courses in business administration, including accounting, finance, marketing, economics, and management. Additionally, there are required courses in English composition, mathematics, chemistry, and physics. Engineering courses are chosen from courses acceptable for other students in the College of Engineering. No more than 32 hours may be taken in courses offered by the College of Business Administration.

**Accreditation**

- The industrial engineering program at UIC is accredited by the [Engineering Accreditation Commission of ABET](https://www.abet.org).
- The mechanical engineering program at UIC is accredited by the [Engineering Accreditation Commission of ABET](https://www.abet.org).

**Degree Programs**

- BS in Mechanical Engineering
- BS in Industrial Engineering
- BS in Engineering Management

**Minors**

- Minor in Mechanical Engineering
- Minor in Industrial Engineering